



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/645,065	08/21/2003	Kenichi Yokouchi	P/2699-30	6981
2352	7590	11/18/2005	EXAMINER	
OSTROLENK FABER GERB & SOFFEN 1180 AVENUE OF THE AMERICAS NEW YORK, NY 100368403			MACARTHUR, SYLVIA	
			ART UNIT	PAPER NUMBER
			1763	
DATE MAILED: 11/18/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/645,065	YOKOUCHI ET AL.	
	Examiner	Art Unit	
	Sylvia R. MacArthur	1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-60 is/are pending in the application.
- 4a) Of the above claim(s) 9,10,12-16,20,21,24 and 31-60 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8,11,17-19,22,23 and 25-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 August 2003 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>8/22/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

Election/Restrictions

1. Applicant's election of claims 1-8, 11, 17-19, 22, 23, and 25-30 in the reply filed on 8/29/2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-8, 11, 17-19, 22, 23, and 25-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Miya Katsuhiko et al (JP 11-330031).

Katsuhiko et al teaches a substrate processor.

Regarding claim 1: A substrate processing apparatus that removes an

unwanted material on a surface of a peripheral portion of a

substrate through etching by supplying etching liquid to the

surface of the peripheral portion, the apparatus comprising:

an etching liquid supplying mechanism (48, 68) that supplies the

etching liquid to the peripheral portion of the substrate; and

an annular member (1,2) that has an inner periphery on or inside

an outer periphery of the substrate and thereby defines a

processing width to be processed by the etching liquid on the

Art Unit: 1763

surface of the peripheral portion of the substrate.

Regarding claim 2: The substrate processing apparatus according to claim 1 wherein:

the annular member is placed in close proximity to the surface of the peripheral portion of the substrate while securing a certain gap such that allows the annular member to come in contact with a liquid film of the etching liquid formed on the surface of the peripheral portion, See Figs. 1, 2,5, and 6 of Katsuhiko et al.

Regarding claim 3:

The substrate processing apparatus according to Claim 1 further comprising:

substrate holding mechanism (base plate 60) that holds the substrate from one surface side thereof, wherein the annular member 4 is placed on the other surface side of the substrate.

Regarding claim 4: The substrate processing apparatus according to Claim 1, wherein: the etching liquid is supplied to the peripheral portion of the substrate from the etching liquid supplying mechanism while the substrate is held rest. The apparatus of Katshiko et al is inherently capable of supplying etching liquid while the substrate is not rotating. This is also seen as a process limitation and is not given patentable weight.

Regarding claim 5: The substrate processing apparatus according to Claim

Art Unit: 1763

1, wherein the substrate W is a substrate of a nearly circular shape;
the apparatus further comprises a substrate rotating
mechanism that rotates the substrate; and
the inner periphery of the annular member is of a circular
shape having an inside diameter equal to smaller than a
diameter of the substrate. See Figs. 1,2,5, and 6 of Katsuhiko et al.

Regarding claim 6: The substrate processing apparatus according to Claim
5, wherein: the etching liquid is supplied to the peripheral portion
of the substrate from the etching liquid supplying mechanism
while the substrate rotated by the substrate rotating
mechanism, see abstract.

Regarding claim 7: The substrate processing apparatus according to Claim
1 wherein:
the annular member 4,6 includes a substrate-opposing
surface that extends
outwards from the inner periphery and
opposes the surface of the peripheral portion of the substrate .

Regarding claim 8: The substrate processing apparatus according to Claim
wherein: the substrate-opposing surface is a plane nearly
parallel the surface of the peripheral portion of the
substrate, see Figs. 1,2,5, and 6.

Regarding claim 9: The substrate processing apparatus according to Claim

wherein: the substrate-opposing surface is an inclined plane inclined to reduce an interval between the substrate-opposing surface and the substrate as heading toward the inner periphery, see Fig.6.

Regarding claim 10: The substrate processing apparatus according to Claim 7, wherein: an outer periphery of the substrate-opposing surface is located outside the outer periphery of the substrate, see Figs. 1,2,5, and 6.

Regarding claim 11: The substrate processing apparatus according to Claim 7, wherein:

the annular member includes a projection that protrudes from the substrate-opposing surface toward the substrate and thereby limits the etching liquid heading toward an inside of the substrate, see Fig. 6.

Regarding claim 17: Claim 1, wherein:

the etching liquid supplying mechanism includes a nozzle 48 that supplies the etching liquid toward a surface of the substrate on an opposite side to a surface containing the surface of the peripheral portion.

Regarding claim 18: The substrate processing

Claim wherein: apparatus according

the nozzle supplies the etching

liquid toward a central portion of the surface on the opposite side, see Fig. 6.

Art Unit: 1763

Regarding claim 19: The substrate processing apparatus according to claim 1, wherein: the annular member has an outer wall surface positioned inside the outer periphery of the substrate, see Fig. 6.

Regarding claim 22: The substrate processing

Claim 1, wherein:

apparatus according to

the etching liquid supplying mechanism includes a

dispense port 47 through which the etching liquid is dispensed

direction perpendicular to a surface of the substrate

direction inclined toward an outside of the substrate.

Regarding claim 23: The substrate processing

Claim 1, wherein: apparatus according the annular member includes

an inner wall surface that in a direction to go away from

rises from the inner periphery surface of the substrate, see Fig. 6.

Regarding claim 25: The substrate processing apparatus according to claim 1, further

comprising a lid member (plate 40) that substantially clogs an internal space

of the annular member.

Regarding claim 26: The substrate processing apparatus according to claim 25 wherein;

the annular member includes an annular groove formed adjacently inside the inner

periphery, see Fig. 6.

Regarding claim 27: The substrate processing apparatus according to claim 1,

further comprising: a gas supplying mechanism that supplies an internal space

the annular member with a gas, see Fig. 1

Regarding claim 28: The substrate processing

apparatus according to claim 27, wherein

the annular member includes an inner wall surface that

risers from the inner periphery in a direction to go away from

a surface of the substrate, and the gas supplied from the gas

supplying mechanism is supplied toward the

inner wall surface, see [0063].

Regarding claim 29: The substrate processing

apparatus according to claim 23,

the annular member includes a gas flowing path that

allows a communication between an internal space and an

external space of the annular member, see [0063].

Regarding claim 30: The substrate processing apparatus according to

claim 1 further comprising:

a protection liquid etching protection liquid toward a center of the substrate

an inner side of the annular member. supplying mechanism that supplies etching

protection liquid toward a center a center of the substrate at an inner side of the annular

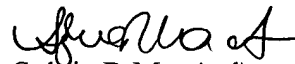
member, see Fig. 1,2,5, and 6.

Art Unit: 1763

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sylvia R. MacArthur whose telephone number is 571-272-1438. The examiner can normally be reached on M-F during the core hours of 9 a.m. and 3 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571-272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Sylvia R MacArthur
Patent Examiner
Art Unit 1763

November 14, 2005